

## #7 Application and Extension of the Automated Atmospheric River Detection Tool [in HMT](#)

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Monitoring the occurrence and characteristics of atmospheric rivers (ARs) is of critical importance along the west coast as their presence has been found to coincide with significant extreme precipitation and flooding events. They have also been found to contribute to cases of extreme precipitation in the eastern US and other places around the globe. The development of an automated technique for the detection and characterization of ARs based on patterns in the integrated water vapor content has been described at a previous NOAA Testbed Workshop. Within the framework of the Hydrometeorology Testbed (HMT), this tool has now been applied to over 20 years of data from the Climate Forecast System Reanalysis (CFSR) enabling the development of a climatology of AR events upon which the severity of current events can be ranked. ARs have been identified throughout the CFSR and statistics on the integrated water vapor content and integrated water vapor transport have been compiled where ARs are present on grids at a resolution of 2 degrees and 2 weeks. Characteristics of ARs detected in real time are compared with these results and events are ranked based on percent of normal and exceedence probability. These results are now being made available to forecasters through the HMT to evaluate their utility and gain additional feedback. This presentation will describe initial experience in application of the methodology to operational type situations as well as an extension of the ARDT to function directly on fields of integrated water vapor transport. Initial results demonstrate several conditions where the function of the revised tool improves operational utility.